

**Nijmegen School of Management**  
**Department of Economics and Business Economics**  
**Master's Thesis Economics (MAN-MTHEC)**

# **Anxiety and the level of democracy**

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Nijmegen, 21 June 2022

Program: Master's Program in Economics  
Specialisation: Economics, Behaviour, and Policy



## Abstract

This master's thesis analyzes the effect anxiety has on both the voter turnout and the level of democracy. Ronald Wintrobe argues in his working paper called '21 Reasons and a simple model of why liberal democracy is in decline', that an increased threat level, which will arguably lead to an increase in anxiety, will lead to a decline of democracy. He tried to explain this thought using the sense of belonging, as explained by Benedict Anderson in his book 'Imagined communities'. He claims that the sense of belonging will increase the level of democracy. Based on literature, this is not always true. Therefore, I conducted a mediation analysis to discover the true relationship between anxiety and the level of democracy and how this is mediated by the sense of belonging. My results show that the level of anxiety has a positive relationship with both the voter turnout and democracy, but this relationship reverses once the anxiety rises above a certain point. Once anxiety gets too high, it people stay at home and thus decreases the voting turnout. These results implicate that Wintrobe's paper is flawed and anxiety has no linear relation with the democratic variables voter turnout and the democracy index.

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## 1 Introduction

Ronald Wintrobe, a professor at the Western University in Canada, presented a working paper on why liberal democracy is in decline in the year 2018. In this paper, he gave 21 reasons as to why this process was occurring. These 21 reasons for the decline of democracy were explained with the idea of ‘sense of belonging’, as explained in Benedict Anderson’s book; ‘Imagined communities’ (Anderson, 2006). One of the 21 named reasons proposed by Wintrobe for the decline of democracy, is the quest for security. He claims security requires a strongman to ward off threats, real or imaginary. The strongman might also be necessary to protect jobs and income from foreign competition, Artificial Intelligence, and so on. This has eroded democracy as described by historian May (2017), Wintrobe argues. This argument left me wondering what the real mechanism is behind the relationship between threats and democracy. One could also argue an increase in threats emphasizes the need and appreciation of democracy. After a literature review, I noticed that others had found evidence for this argument. For example, a real threat like terrorism increases voter participation according to Robbins et al. (2013) and many more researchers. Most of these articles will be discussed in the literature review in section 3. Robbins et al. (2013) empirically show that terrorism increases voter turnout in general elections. Others show how an increase in threats or experience with higher threat levels affects political behavior. For example, Bellows and Miguel (2009) found citizens of Sierra Leone who experienced war violence were more likely to attend meetings, join civic groups, and vote. Furthermore, an article by Blattman (2009) argues that victims of political violence and traumatic events in Uganda are more likely to vote as well as engage in community activism. Based on these articles, I was motivated to investigate whether the increased threat levels actually decrease the level of democracy, as is claimed by Wintrobe. Emotions provoked by an increase in threat, like anxiety, increase the voting turnout and democracy in a country, as the urgency and anxiety for safety make people realize the importance of elections. I believe that as a result of this realization, elections become more salient, and democracies will function more efficiently.

The current increased threat in Ukraine has not steered the country to seek for a different strongman who would erode democracy, but has increased the faith in the democratic leader who shows himself to be a strongman (Huang & Bala, 2022). Additionally, the non-democratic

alternative may seem unpreferable compared to the current situation. In the book “Imagined communities” by Anderson (2006), anxiety or any mental state is undiscussed, although it might affect or overrule the sense of belonging.

The main problem when analyzing the effect of an increased threat level on democracy and the effect of the sense of belonging has on the democracy is picking the correct variables to examine. A threat level is unmeasurable, because it is something subjective. Some might not experience any threat in dangerous situations, while others already feel unsafe walking outside. Moreover, the sense of belonging is also not quantifiable. To measure democracy, one could either rely on the voting turnout, which is measurable, or use a subjective democracy index. A drawback of this approach is that the voting turnout is not necessarily an indicator of the level of democracy, as some not-democratic countries have higher levels of voter turnout compared to liberal democratic countries. To overcome this problem, only countries that are part of the OECD, which are usually well functioning democracies, will be used in this thesis. All countries used in this thesis can be found in appendix 2. To make the sense of belonging measurable, I will substitute the sense of belonging for proxy variables that have a theoretical relationship with the sense of belonging. Proxy variables are variables that are not directly relevant but serve in place of an unobservable or immeasurable variable, such as a sense of belonging (Maddala & Lahiri, 1992). The proxy variables used in this thesis are subjective well-being and the property rights index. For the threat level, I will use the level of anxiety within a country. Explanations for why I selected these variables are elaborated in the methodology section, chapter 3, of this thesis.

There are reasons to assume an increase in anxiety will decrease the value of both proxies for the sense of belonging, and an increased sense of belonging will increase voter turnout, as claimed by Wintrobe. However, because of the alleged negative relationship between anxiety and the proxy variables, there should also be a negative relationship between anxiety and voter turnout. In this thesis, I will investigate whether this is correct, as there are many reasons to expect a positive relationship between anxiety and voter turnout. The model used to investigate this problem is the mediation model, where the proxy variables will serve as the mediation variable. So, for both mediation variables, separate analyses will be performed. The two dependent in this thesis are: the voting turnout in OECD countries for general elections and the level of democracy as given by the V-DEM index.

As an illustration of my proposed mechanism, I will supply an example of the terrorist attacks in Spain in 2004. The terrorist attacks in Madrid on March the eleventh 2004 worked to increase voters' awareness of their discontent with the governing party's policies while simultaneously mobilizing dissatisfied voters in the wake of the attacks (Lago & Montero, 2006). Terrorist attacks are threatening and novel political events that lead to anxiety in the country, which, in turn, induces individuals to examine the political environment more closely and to attribute greater salience to proximate political events (Robbins et al., 2013). It might also be the case that the increased anxiety caused more sense of belonging due to the mobilization which increased the voting turnout. To what extent this is correct can be investigated using the mediation model. Based on the idea of the Affective intelligence model created by Robbins et al. (2013), the quest for security should lead to more democracy instead of less.

I will try to show the quest for security does not decrease the sense of belonging but increases anxiety which increases voting participation. In addition, I want to find out to what extent this relationship is mediated by the proxy variables for the sense of belonging. Hence, the central question investigated in this thesis will be how anxiety affects democracy, measured by both the democracy index and the voting turnout, and how this relationship is mediated by the sense of belonging. As the relationship might not be linear, I will also investigate whether there is a difference between countries with a low level of anxiety and countries with a relatively higher level of anxiety. This thesis aims to increase the knowledge on how emotions affect our voting behaviour. With this knowledge, a better understanding of why people vote or take part in political activities can be created. A deeper understanding is needed to understand why we see a current declining trend in democracy. The better understanding could be effective to stop or reverse this trend. If I prove that an increased threat level does not erode democracy, I show Wintrobe's article is partially wrong and that the sense of belonging is not the sole explanation for the decline of democracy.

After this introduction, this master's thesis will continue as follows: chapter 2 is a literature review that is used for deriving three hypotheses. In chapter 3, the variables used in the dataset are explained, and the general model is introduced. Chapter 4 presents the results. Chapter 5 concludes and discusses how this thesis could be improved in the future.

## 2. Literature review

### 2.1 The voting paradox

The article by Wintrobe is based on the voting paradox. The starting point is that people would only vote if the benefit of voting is larger than the costs of voting. If the prediction of the paradox is correct, people would never vote. The costs of voting are always positive, as it costs time to get informed and to physically vote. The benefits, defined as the change in the likelihood of someone's preferred party's winning the election because of voting, are close to zero in a sizeable community. This is because a single vote becomes less important as more people participate in the election. So, a rational person would not vote, as the costs always outweigh the benefits. However, in most areas in liberal democratic countries, most people do vote most of the time. Therefore, this theory is called a paradox. Mathematically it can be shown as in equation 1:

$$(1) \quad p (NB_i - NB_j) > C,$$

Where  $p$  shows the probability that your vote makes a difference in the election,  $NB_i - NB_j$  displays the difference in benefits between your preferred party when it gets elected and your less preferred party.  $C$  is the costs of voting. To solve this paradox, Wintrobe adds the sense of belonging to the benefits part of the model. The sense of belonging increases the benefits when the community experiences belonging because of political participation. Adding this to the model, it becomes as shown in equation 2:

$$(2) \quad (\partial U / \partial B) / (\partial B / \partial V) - ((\partial U / \partial C) / (\partial C / \partial V)) > 0.$$

So, at the margin when taking the first derivative, a person votes if the marginal utility of voting with to the sense of belonging is greater than the marginal disutility of the costs of voting. This is the final formula I disagree with, as it does not take emotions like anxiety into account. Using the previously mentioned formula, Wintrobe explains that the quest for security will decrease democracy, and thus a decrease in voting. However, as Olatunji et al. (2011) showed, an unsafe environment increases anxiety, and anxiety increases voting participation as shown by multiple pieces of research (Markus et al., 200; Markus & MacKuen, 1993; Valentino et al., 2011). Therefore, I want to investigate whether the model is also correct for the quest for security.



## **2.2 Solutions to the voting paradox**

As mentioned, the voting paradox is central in Wintrobe's article. He solved the model with the addition of 'sense of belonging'. However, this is not the first time solutions have been proposed for the paradox, so the solutions are disputed. Edlin et al. (2007) explain the social benefits at stake in the election are considerable, so the expected utility benefit of voting for an individual with social preferences can be significant. Voters think in terms of group and national benefits. The expected value of the social benefit does not approach zero or does even diminish as the number of voters grows larger. This theory is called the altruism theory of voting. Others believe the minimax regret theory is the solution to the model. This theory claims that when people decide whether to vote or not might expect regret when considering not to vote. Anticipating regret, people incorporate regret to reduce this possibility, so they minimize their maximum regret by voting (Ferejohn & Fiorina, 1975). Fiorina (1976) explained how people do not vote to elect a preferred candidate, but they vote due to the desire to express their political preferences. Intrinsic motivation refers to doing something because it is inherently satisfying or enjoyable, so some argue that people derive utility from the act of voting. Riker and Ordeshook (1968) argued that individuals vote to fulfill a civic duty. They see this as a duty because they might fear democracy will collapse without participation. None of the previously mentioned articles mention anxiety as an explanation to vote. As we currently see democratic countries under threat from non-democratic countries, we might vote because we now realize the privileged position we are in. This is something that several Dutch politicians mentioned during the 2022 election to motivate people to vote (EenVandaag, 2022). Due to the current situation in Ukraine for example, people are more appreciative of their voting rights according to the previously mentioned article.

## **2.3 What affects the level of democracy?**

Wintrobe used the voting turnout to explain how democracies are in decline, but the voter turnout is not the sole thing that decides the level of democracy. A low voter turnout means that only a few people decide who acquires the power, which is a threat to democracy. However, a low voter turnout is not always a threat (Czesnik, 2006). The voter turnout especially matters when it overlaps with social and political inequalities and when it means the delegitimizing of a regime, these things often occur simultaneously. So, if there is no social and political inequality in the voter

turnout, the regime can still be legitimate. The legitimacy is founded on participation, the process, and the output (Pharr & Putnam, 2018). A sizeable percentage of voter turnout thus is a source of legitimacy, but it is not the sole one. An example of a country with a low voter turnout but high legitimacy is Switzerland. A possible explanation for such a low voter turnout is ‘voter fatigue’ which happens when there is little time between the current and last election (Franklin, 2004). To clarify the distinction between the quality of democracy and the electoral voting turnout, two dependent variables will be used. The variables will be the V-dem democracy index and the voter turnout.

## **2.4 Voting turnout and anxiety**

The main variables used in this thesis are anxiety levels and the two variables for democracy. One of the dependent variables used for democracies is the voter turnout in general elections. Extensive research has already been done about the relationship between these two variables. For example, Marcus and MacKuen (1993) researched the effects of anxiety and enthusiasm on voting behaviour. They found anxiety stimulates attention toward the upcoming campaign and political learning and discourages reliance on habitual cues for voting. So, with a threat, and thus people looking for security, people will have more attention for elections. The same conclusion was made by Robbins et al. (2013), who based their research on the Affective intelligence model, which shows that anxiety will undermine the propensity to rely on a political habit (Markus et al, 2000). The affective intelligence model also shows that in times of crisis, when anxiety is produced, the politically unsophisticated will be motivated to gather information, make judgments, and take part in politics based on this information (Vasilopoulos, 2019). Enthusiasm, just like anxiety, increases interest and involvement in the election. However, when the threat becomes too big, anxiety could be dominated by anger, and anger has a different relation to the voting turnout. Not just anxiety and anger can motivate people to vote, other negative emotions can also provoke the same emotion (Valentino et al., 2008). However, some emotions are stronger than others. The previously mentioned article found that anger is a stronger emotion than anxiety. Anger creates different behavioural outcomes as it leads people away from the deliberation and is associated with the desire to blame and punish (Petersen, 2010). The difference between anger and anxiety is also clear according to Druckman and McDermott (2008), as angry citizens are likely to support a risky choice while anxious citizens will oppose it. Although angry citizens tend to vote differently, it

does motivate people to vote. Drawing on cognitive appraisal theory and the affective intelligence model, (Valentino et al., 2011) predict that anger, more than anxiety or enthusiasm, will mobilize. So, all three emotions; anxiety, anger, and enthusiasm boost voting participation according to the previously mentioned theories. Therefore, the quest for security, where countries require a strongman to ward off threats, should increase voting participation, and thus Wintrobe's theory is likely incorrect. To conclude, emotions are tools for efficient information processing and enhance the ability to engage in political activities. This is contrary to the idea of Wintrobe, who assumes that threats lead to a decrease in democracy.

## **2.5 Anxiety and the sense of belonging**

Anxiety hurts the sense of belonging. A person with anxiety will participate less in physical and social activities (de Wit et al., 2010), suffer a decreased school performance (Pine et al, 1999), experience more headaches (Mercante et al., 2011) and sleeplessness (Ramsawh, 2009). Also, it causes concentration problems (Fernandez-Castillo & Caurcel, 2015). As mentioned before, a sense of belonging refers to the need to be part of and to be accepted by a group. All the previously mentioned consequences of anxiety will decrease a person's ability to function well within a group, and therefore the sense of belonging will decrease when a person has anxiety. For illustration, a person with anxiety will take less part in physical and social activities, this leads to less socializing and thus less belonging. As anxiety leads to a decrease in social activities, it might also cause people to vote less, because they leave the house less often. Therefore, I expect anxiety, at a certain point, to negatively affect the voting turnout.

## **2.6 The proxy variables**

In this thesis, the sense of belonging will be captured by subjective well-being and the property rights index. According to Malone and Wachholtz (2018), there are significant relationships between anxiety, depression, and every domain of well-being, except for faith. The level of anxiety is inversely related to the level of well-being. Stein and Heimberg (2004) came to the same conclusion. He perceived that well-being decreases when people experience anxiety. Di Matteo, Lepper, and Croghan (2000) found that an increased level of anxiety leads to social isolation. This isolation could also lead to a reason not to vote during an election, so more anxiety could, through subjective well-being, decrease the voting turnout. therefore, although I expect the

level of anxiety to increase the voting turnout, I expect the mediation path to be negative because of the inverse relationship between anxiety and subjective wellbeing.

The same can be concluded for the other proxy variable for the sense of belonging; property protection. The property rights index measures the degree to which a country's laws protect private property rights and the degree to which the government enforces those laws. When people feel protected at home, the sense of belonging will increase. Ownership of a house has a positive effect on the voting turnout (Davies & Newton, 1974), therefore, the expected relationship between the property rights protection index and the voting turnout/democracy index is positive. Anxiety leads to a lower economic performance, which decreases the chance of permanent house ownership (Simon et al., 2000). So, the expected relationship between anxiety and property rights protection is negative. Just like with the subjective wellbeing score, the direct path between anxiety and the dependent variables is positive, but the indirect path through mediation is expected to be negative.

## 2.7 Hypotheses

Following the knowledge from the literature review, three hypotheses can be formed:

*H1: Anxiety leads to an increase in the voter turnout and the level of democracy, and this is negatively mediated by the sense of belonging.*

Following the affective intelligence model, the level of anxiety should be positively correlated to both the voter turnout and the level of democracy. However, the level of anxiety probably negatively affects both mediation variables, the mediation path should be negative.

*H2: There is a difference in the relationship between anxiety and the democratic variables (voting turnout and the level of democracy) in anxious versus relaxed countries.*

According to most research, the level of anxiety always increases the voting turnout and through political participation also the level of democracy. However, a too elevated level of anxiety can lead to social isolation, and thus decrease the voting turnout. Therefore, I expect there to be a turning point where the relationship between anxiety and the dependent variables reverses.

*H3: The relationship between anxiety and the voting turnout is different compared to the relationship between anxiety and the level of democracy.*

As explained in the literature review, the level of democracy is partially explained by the voting turnout, but not entirely. Therefore, I expect the results between the voter turnout and the democracy index to differ. In the following section, there will be an explanation of all variables

used, why they are used, and from where they are obtained. After that, the used model will be explained.

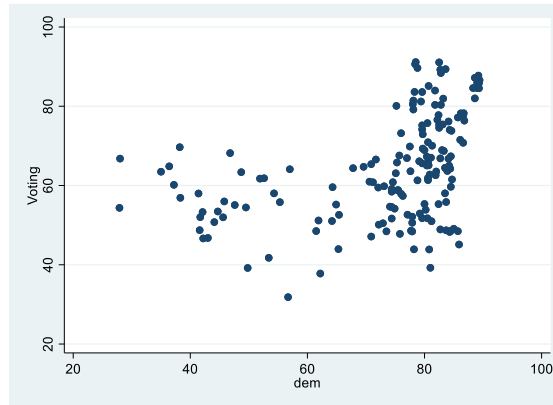
### **3. Data and Methodology**

#### **3.1 Dependent variables**

To assess my hypotheses, data is needed which captures both the anxiety levels in multiple countries throughout the recent years as the level of democracy in these countries. Also, to look for the mediation effect, two proxy variables to capture the sense of belonging are needed. The dependent variables will be the voter turnout in the general elections and the level of democracy. Wintrobe uses the voter turnout as the measurement of democracy in his work. However, I think this is not sufficient. Although the voting turnout is essential to a democracy, it is not the only aspect that determines the quality of a democracy. To see whether the results for this thesis are the same for the level of democracy and the voting turnout, both variables will be used and compared. The data on the voting turnout is obtained through IDEA (International Institute for Democracy and Electoral Assistance). Every year between 2005 and 2020 in which a general election has been held within the European OECD countries will be used in this thesis. All these elections in all the countries lead to 171 observations for this variable. To see from which countries the data is originated from you can look at appendix 1. The level of democracy is obtained via the V-Dem database. The V-Dem database is made by Professor Lindberg from the University of Gothenburg and is funded by several government organizations and the World Bank. The V-Dem database distinguishes different principles of democracy, including Electoral and Egalitarian democracy. V-Dem acknowledges the fact that a democracy measure's validity consistency depends on the proper definition of the underlying concept (Coppedge, 2016). The V-Dem dataset supplies the most well-documented and well-grounded collection of democracy measures available today (Boese, 2019). As mentioned, Wintrobe argues that democracy depends on people voting. However, comparing the quality of democracy and the voting turnout shows that the two variables are not exactly alike, although it appears there is a significant positive relationship. In appendix 5 you can see both the variables democracy level and voter turnout over time per country. It shows that both variables have different values and sometimes run in different directions over time. Below in figure 1, a scatterplot can be seen of the level of democracy versus the voting turnout of all the observations

in the dataset. As can be seen in figure 1, the values of both variables can range between 0 and 100. The mean voter turnout is 64.14% and the average score for the democracy index is 74.72%. The V-dem database consists of 510 observations. In figure 1, only the observations for the years when countries also have an election are shown.

**Figure 1: Scatterplot of Voting turnout and the level of democracy**



As explained in the literature review, political participation is extremely important for democracies, and it is fundamental to democratic ideals. Countries with a relatively low voting turnout such as Switzerland and the United States, both approximately 50%, are still considered very democratic in the V-Dem database (84 and 73 on a scale from zero to a hundred). So, voting turnout and democracy are not necessarily the same and by using both variables in the model, they can be compared. The V-Dem database does not only consider the voting turnout but multiple varied factors, therefore I expect the results between the level of democracy and the voter turnout to differ significantly. This thesis will do a mediation analysis, and to do this, two mediation variables are used. Both will be explained in the following section.

### **3.2 Mediation variables**

#### **3.2.1 Subjective well-being**

Two mediation variables will be used in this thesis. Both function as proxy variables for the sense of belonging. The first one is the level of subjective wellbeing. A sense of connectedness, like belonging, is increasingly recognized as a protective factor in resilience and well-being (Libbey, 2007). So, based on this, one can conclude that there is a positive relationship between subjective well-being and the sense of belonging. Countries with higher subjective well-being are thus also more likely to be countries with a higher sense of belonging. This relationship is also true

for time series according to Jose et al. (2012), who explain that people who report a higher level of connectedness at one point would subsequently report higher well-being over time. The effect of anxiety on subjective well-being is negative. Examples of the effects of anxiety that affect the sense of belonging are mentioned in the literature review. The data for subjective well-being is from the OECD database called; ‘‘How’s life?’’. The measurement for the average satisfaction is done by survey questions concerning overall satisfaction with life on a zero to ten scale. The data on subjective well-being ranges from 2005 until 2020 with a few missing values for the beginning years. There are 455 scores of well-being in the dataset divided over all countries. The mean score is 6.39, with 4.18 being the lowest recorded score and 8.02 being the highest recorded score.

### **3.2.2 Property rights protection**

The second proxy variable for the sense of belonging is the property rights protection index. The property rights index measures the degree to which a country’s laws protect private property rights and the degree to which its government enforces those laws. It also assesses the likelihood that private property will be expropriated. I chose this index to show the extent to which people can feel at home on their property and can own a property. It is shown by Mee (2009) that belonging tends to be associated with ownership (in this case homeownership), which can undervalue the belonging of people who do not own. Based on that, I argue that a well-protected house without having the risk of theft will increase the feeling of being at home, and thus increase the sense of belonging. Hong Kong even vigorously promotes homeownership with as goal to increase the community’s sense of belonging to the country. The reason for this policy could be that homeownership encourages investment in local amenities and social capital because it gives individuals an incentive to improve their community. Ownership also creates barriers to mobility (DiPasquale & Gleaser, 1999). Also, just like the sense of belonging, as argued by Wintrobe, the ownership of a house has a positive effect on the voting turnout (Davies & Newton, 1974). People with anxiety are less likely to be in the highest socio-economic group and have lower employment rates and income compared to people without anxiety (Patel et al., 2002). Lower employment rates and income will arguably result in lower property ownership and protection. Therefore, the expected relation between anxiety and property rights is negative. To conclude, the property rights index is a good proxy variable for the sense of belonging. The property rights index is a subindex of the economic freedom index, made by journalists from the Wall Street Journal. For property rights, there are 540 observations in the dataset, equal to 18 per country. The first observation for

all countries is in 2005 and the latest is from 2022. The mean value in the dataset is 71.57, the lowest value is 30 and the highest is 100. 100 is also the maximally obtainable value for this variable, the lowest possible value would be 0, this would only be possible in some kind of anarchy.

### **3.3 Independent variable - Anxiety**

The independent variable used in this thesis is the anxiety level in the European OECD countries. The data on anxiety is from the Institute for Health Metrics and Evaluation, founded by Bill Gates in 2007. The dataset consists of 204 countries in the world. It covers the years 1990 until 2019. The anxiety data shows the share of the population that suffers from anxiety. It tries to supply a true estimate (going beyond reported diagnosis) of anxiety disorder prevalence based on medical, epidemiological data, surveys, and meta-regression modeling (IHME, 2022). The usual problem with data on anxiety is that all countries report differently on this topic. This can be explained by the difference in health care worldwide. Wealthier countries provide more help to people with mental problems and therefore have a higher level of reported anxiety (Ruscio et al., 2017). Inequality in access to mental health services across countries could have led to poorer mental health outcomes in countries with higher inequality, this could also cause the data to be not exact, However, the dataset I will use takes this into account by not only looking at reported diagnosis of anxiety (Wilkinson & Pickett, 2017). In my dataset, I used all data available from the Institute for Health Metrics and Evaluation, which led to 451 observations divided over all 30 countries, so there are a few missing observations. The mean value for anxiety is 5.21, which shows that 5.21% of the population in OECD countries used suffer on average from anxiety. The lowest value in the dataset is 3.34 and the highest is 8.79. If everyone would suffer from anxiety in a country, the value would be 100, and if no one would experience it, the value would be 0.

### **3.4 Control variables**

#### **3.4.1 GDP per capita increase per year**

To control for the effects of the changes in income, the percentage change of GDP per capita is added to the model as a control variable. Income changes affect both the anxiety levels in a country and the voting outcome according to several studies. Lower income levels are associated with multiple lifetime mental disorders. A reduction in income is also associated with increased risk for these disorders (Sareen et al., 2011). According to other studies, higher income levels have

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not been shown to be strongly associated with decreased risk of mental health problems (Kahneman et al., 2006). Income increases are associated with an increase in voting participation according to many researchers (Ashenfelter & Kelley, 1975). Income is also associated with the sense of belonging. People with a lower income experience greater isolation and a lower sense of belonging compared to people with a higher income (Stewart et al., 2009). So, this variable has a significant theoretical relationship with all main variables and therefore needs to be included in the model as a control variable. Data on the GDP increases per capita is obtained from the world bank. It ranges from 2005 until 2020, just like the other variables. The values stand for the percentage changes compared to the previous years. The main value for this variable is 1.53. The minimal value in the dataset is -14.46, the maximal value is 23.99.

### **3.4.2 Tertiary Education**

The education level is the second control variable included in the model. This is because the level of education, just like the GDP per capita increase, is associated with all the other variables used in this thesis. To start with the relationship with anxiety, low levels of education are significantly associated with anxiety (Bjelland et al., 2008). Many researchers have found a relationship between educational attainment and political participation (Burden, 2009). In fact, education is seen as the most potent predictor of an adult's political activity (Verba et al., 1995). As the level of education is important in determining both anxiety and political participation, it should be considered within the model. Therefore, the share of tertiary education is used as a control variable. Population with tertiary education is defined as those who have completed the highest level of education, by age group (OECD, 2021). This data is obtained from the OECD database and ranges from 2005 until 2021. The values for the variable can go from 0, if nobody in a country completed the highest level of education, to 100, if everybody graduates from a university. A summary of all variables can be found in appendix 4. The summary shows the number of observations, the mean, the minimal and maximal value, and the standard deviation per variable.

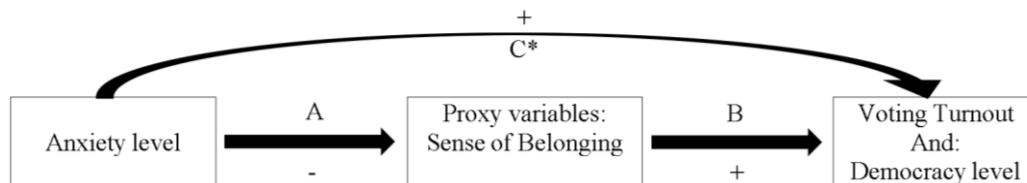
## **3.5 Model specification**

Due to the limited number of observations for several variables, it is impossible to conduct a time series analysis. According to Meidinger (1980), the minimal number of observations needed to conduct a time series analysis is 50, and my dataset only has a maximum amount of 17 per

country. Most of the data ranges from 2005 until 2022, and these 17 years are thus not enough. For this reason, a panel dataset is needed to obtain potential meaningful results. In this panel dataset, a mediation analysis will be performed. A mediation model is used to investigate whether one variable transmits the effect of a predictor (independent) variable on an outcome (dependent) variable. This means that there are two pathways from the main independent variable to the dependent variable. Graphically, the model is shown below in figure 2. Figure 2 also shows the expected relationships. There is an expected positive relationship between anxiety and the democratic variables, and there is a negative relationship between anxiety through the sense of belonging.

In panel data, there are three different models one could use. The Pooled OLS (POLS) model, the fixed effects model, and the random-effects model (Studenmund, 1998). In the POLS model, all observations from all countries in all periods are pooled as being the same. The assumptions made are that the values stay the same throughout the years, the  $\beta$ 's are the same for all countries, and that the variance is equal for all countries. These are strong and unrealistic assumptions, but the model does help to see the general pattern between the variables. Because the individual countries have too few observations, the pooled OLS model is the most suitable and will therefore be used in this research. Using the POLS model, the OECD countries used function as one big country without differences in coefficients.

**Figure 2: Graphical model of the mediation analysis**



In figure 2, A is the relationship between the independent variable anxiety and the mediation variables. B is the relationship between the mediation variables and the dependent variables. C\* is the direct relationship between anxiety and the dependent variables. In the mediation analysis, two effects are important. The direct effect, which is the direct relationship between the two main variables (C\*), and the indirect effect, which is the relation between the same dependent and independent variables, but via the mediation variable (A and B). For this model to hold, there should always be a significant relationship between the two main variables, in this case, the anxiety level and the democratic variables. The model can be shown as follows:

$$\begin{aligned}
\text{Voting Turnout / democracy index}_{i,t} &= \beta_0 + \beta_1 * \text{Anxiety}_{i,t} + \beta_2 * \text{Mediation variable}_{i,t} + \beta_3 * \\
&\quad \text{GDP Per Capita increase}_{i,t} + \beta_4 * \text{Tertiary Education}_{i,t} + \alpha_i + \epsilon_{i,t} \\
\text{Mediation variable}_{i,t} &= \beta_0 + \beta_1 * \text{Anxiety}_{i,t} + \epsilon_{i,t}.
\end{aligned}$$

So, the dependent variables, being the voting turnout or the democracy index are determined by everything after the equal sign.  $\beta_0$  is a constant value that functions as the intercept, so if all other values have zero as a value, this is the value for the voting turnout.  $\beta_1$  is the slope for the variable anxiety for country  $i$  at time  $t$ , this value is expected to be positive. The mediation variable only depends on the level of anxiety. The  $\beta_3$  is the coefficient for the control variable GDP per capita increase also for country  $i$  at time  $t$ .  $\beta_4$  says the same for the level of tertiary education within a country. The  $\alpha$  covers entity-specific effects and the  $\epsilon$  is the classical error term. The database is constructed using Excel. The construction of the model and the regressions are done using STATA. The mediation analysis is performed using the MEDSEM tool on STATA (Mehmetoglu, 2018). In this tool, the mediation will be assessed using the Baron and Kenny (1986) approach. This approach consists of three separate regressions for each path as seen in figure 2.

#### 4. Empirical Results

To conduct a mediation analysis between the variables anxiety as the independent variable and the democracy level and voting turnout as the dependent variables, it is important to first investigate whether there is a significant relationship between them. If there would be no significant relationship between the dependent and independent variable, there is nothing to mediate. Doing a simple regression analysis between both variables gives the results in table 1. Anxiety as the independent variable has a positive significant effect on both the voter turnout and the level of democracy, as was predicted in the literature review.

**Table 1: Regression outcome; anxiety (independent) on democracy index and voting turnout**

<b>Democracy index</b>	
<b>Anxiety</b>	4.62 *** (11.95)
<b>Constant</b>	51.03*** (24.34)
<b>N</b>	451
<b>Voting turnout</b>	
<b>Anxiety</b>	2.90 *** (4.44)
<b>Constant</b>	49.96*** (14.54)
<b>N</b>	154

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , t-values in parentheses.

As shown in the table above, the democracy index increases by 4.62 whenever the anxiety level increases by one percent in the OECD countries combined. Whenever the anxiety level is equal to 0, the democracy index is predicted to be 51.03 on a scale of 0 to 100. For the voting turnout, comparable results are obtained. When the anxiety level increases by 1 percent, 2.9% more people in the population will vote. If the anxiety level would be equal to 0, almost 50% of the population would vote. Consulting the scatterplots between the variables (Appendix 1), it seems like the relationship between voter turnout and anxiety might not be linear. The relationship seems to weaken or reverse as anxiety increases. The main difference in table 1 between voting and democracy is the sample size for both dependent variables. The dataset has a score for the democracy index for every year, but there is not a election in every year, as those usually take place every 3.5 years in the dataset. Important to note here is that in this regression, it is assumed that the

relationship between anxiety and democracy/voting is the same in all countries and every single year. Unfortunately, this is an assumption that needs to be made because of the limited number of observations. Now we know that there is a significant relationship between anxiety and both the dependent variables, I want to investigate how this relationship depends on or is mediated by the sense of belonging. As explained in earlier paragraphs, for the sense of belonging I will use two different proxy variables: subjective wellbeing and the property rights protection index. Earlier, I predicted that anxiety would have a negative impact on both the proxy variables. This can also be assessed, although it is not the main question in this thesis. The results are displayed in table 2.

**Table 2: regression outcome; anxiety and the mediation variables (property and wellbeing).**

	<b>Property protection</b>
<b>Anxiety</b>	6.59*** (12.37)
<b>Constant</b>	35.53*** (14.54)
<b>N</b>	451
	<b>Subjective well-being</b>
<b>Anxiety</b>	0.28*** (10.72)
<b>Constant</b>	4.90*** (34.55)
<b>N</b>	427

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Unfortunately, the two relationships are positive, opposite to what I expected in the literature review. Finally, before going into the mediation analyses, it is good to investigate the relationships between the mediation variables and the dependent variables. I expected, based on the literature, that both mediation variables should have a positive impact on both the democracy level and the voting turnout. The regression outcomes between the mediation variables and both the dependent variables can be found below in table 3.

**Table 3: Regression outcome mediation variables and dependent variables**

	<b>Voting turnout</b>	<b>Democracy index</b>
<b>Property Protection</b>	0.198** (2.73)	0.407*** (10.12)
<b>Subjective Wellbeing</b>	4.90** (2.92)	2.58*** (2.94)
<b>N</b>	113	336

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , T-values in paratheses

As can be seen, both the mediation variables have positive significant relations with the dependent variables. This was expected, as Wintrobe claims that an increase in sense of belonging should lead to an increase in democracy. It is not too important to know the direct relationships between the mediation variables and the dependent variables, as I am especially interested in how the mediation variables affect the path between anxiety and the dependent variables. Now we know the relationships between all variables used in this thesis, the mediation analysis can be conducted. To show what the mediation analysis looks like, I will display the outcome of one regression in table 4, and discuss the values obtained. The other mediation analyses can be found in appendix 3.

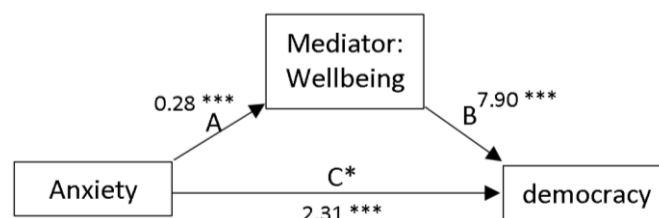
**Table 4: Mediation analysis with democracy as dependent variable and wellbeing as mediator**

Direct path (N = 427)	Coefficient	Significance
Anxiety -> Democracy (C*)	2.31 ***	0.000
Indirect path (N=427)	Coefficient	Significance
Anxiety -> Wellbeing (A)	0.28 ***	0.000
Wellbeing -> Democracy (B)	7.90 ***	0.000
(Indirect effect / total effect) = (2.213/4.525) = 0.489		
49% of the effect is mediated through subjective wellbeing.		
(Indirect effect / direct effect) = (2.213/2.312) = 0.957		
The direct effect is almost equal to the indirect effect.		

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The figure above shows one of the six mediation analyses performed in this thesis, with subjective wellbeing as the mediation variable, functioning as the proxy variable for sense of belonging. The pathways A, B, and C\* can be seen below in figure 3:

**Figure 3: Mediation analysis graphically shown including pathways**



Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

As figure 3 shows, there are two pathways through which anxiety changes the democracy level for the OECD countries. The direct pathway (referred to as C\*) is significant with  $\alpha=0.01$  and a coefficient of 2.31. The indirect path, goes through both A and B. So, an increase in anxiety increases subjective well-being, and the increase in well-being affects the level of democracy also. Both the relationship between anxiety and subjective well-being, as the relationship between subjective well-being and democracy are positively significant. This means that there is a mediation effect. This means that the relationship between anxiety and the level of democracy is partially explained and affected by the mediation variable subjective wellbeing. I expected in the hypothesis section, that the indirect pathway should be negative, as there is a negatively theoretical relationship between anxiety and the sense of belonging. However, pathway A has a small positive coefficient, so the hypothesis is not correct. The indirect effect is approximately 49% of the total effect size, making the indirect effect as strong as the direct path. The calculations are shown below the regression values in the figure.

#### 4.1 Hypothesis 1

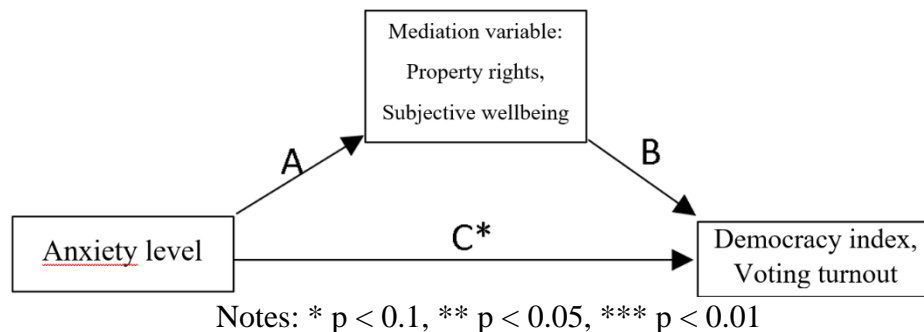
In the methodology chapter I hypothesized the following:

*H1: Anxiety leads to an increase of the voter turnout and the level of democracy, and this is negatively mediated by the sense of belonging.*

To evaluate this, I combined the observations in the dataset and ran a mediation analysis for both the dependent variables. For the dependent variable democracy index, the results are as follows. Below in figure 4, you can see the coefficients for all the pathways in the mediation analyses. In figure 5, a more detailed overview can be seen. In figure 5's second row, you can see the direct pathway from the independent variable anxiety to the dependent variable democracy index (so pathway C\* in figure 4). The coefficient shows the extent to which an increase in anxiety leads to an increase in the level of democracy. As expected in the hypothesis, an increase of one percent in the anxiety level leads to an increase in the level of democracy. In the third column of the table, the level of significance can be seen. Here, a significance level of 0.000 means that the coefficient is significant with an alpha level of 0.01, as indicated by the three stars. The indirect, mediation path between the dependent and independent variables can be seen in the fourth and fifth

rows. Path A, which runs between anxiety and the mediation variable wellbeing, is also significant with an alpha of 0.01 and has a coefficient of 0.21, meaning that an increase in anxiety by one percent leads to an increase in wellbeing (which has a score between 0 and 10) with 0.21. The final pathway is the one between the mediation variable and the dependent variable, which is also significant with an alpha of 0.01 and a coefficient of 3.25, meaning that when the wellbeing increases with one (on a scale from 0 to 10), the level of democracy increases with 3.25. In addition to the mediation analysis, you can see the power of the indirect mediation path (A and B in figure 4) compared to both the total and direct effect. In this first calculation below the paths in table 5, the share of the indirect path compared to the total effect is shown. The indirect path is calculated by multiplying path A by path B. The total effect is calculated by adding the direct path (C\*) to the indirect path. 43% of the relationship between anxiety is explained by the proxy variable for the sense of belonging, and subjective wellbeing. So, the direct relationship between anxiety and voting/democracy is mediated for 43%. The bottom line of the figure shows the share of the indirect effect compared (paths A and B) to the direct effect (path C\*). It shows that the indirect path is about 0.75 times, so smaller, than the direct path. The pathways A, B, and C, as used in all tables shown below, represent the paths as shown in figure 4. So again, paths A and B represent the indirect, mediated path, and C\* stands for the direct pathway between anxiety and either the voting turnout or the democracy index.

**Figure 4: Mediation analysis graphically shown including pathways**



**Table 5: Mediation analysis: Anxiety, wellbeing (mediator), and democracy index**

Direct path (N = 427)	Coefficient	Significance
Anxiety - > Democracy (C*)	.91 ***	0.000
Indirect path (N=427)	Coefficient	Significance



Anxiety -> Wellbeing (A)	0.21 ***	0.000
Wellbeing -> Democracy (B)	3.25 ***	0.000
<b>(Indirect effect / total effect) = (.7/1.613) = 0.434</b>		
43% of the effect is mediated through subjective wellbeing.		
<b>(Indirect effect / direct effect) = (.7/.912) = 0.768</b>		
The direct effect is 0.768 as big as the indirect effect.		

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The analysis, as shown above, is done four times to answer the hypothesis as there are two dependent variables and two mediation variables. The outcomes of the other analyses are summarized in the table below in table 6. The full analyses can be found in appendix 3.

**Table 6: outcomes of mediation analyses**

All countries combined	Subjective wellbeing	Coefficient	Property protection	Coefficient
<b>Dependent variable:</b> <b>Voting turnout</b>	Complete mediation (only indirect path)	0.62	Complete mediation (only indirect path)	0.45
<b>Dependent variable:</b> <b>Democracy index</b>	Partial mediation (both significant)	0.91***	Partial mediation (both significant)	0.91***

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

When the proxy variable subjective wellbeing is used, the relationship between anxiety and the voter turnout is completely mediated. This means that there is no longer a significant pathway between anxiety and voting, only the indirect path is significant. So, although anxiety does not directly influence the voting turnout, it does significantly affect subjective wellbeing, which changes the voting turnout significantly. Hence, the relationship between anxiety and voting turnout is completely mediated by the proxy variable for the sense of belonging. The relationship between anxiety and the democracy index is partially mediated by subjective wellbeing. This analysis is fully explained in the previous paragraph. As for the mediation variable property protection, the results are the same. When the voting turnout is used as the dependent variable, the mediation is complete. A complete mediation means that the relationship between the dependent

and independent variable is only significantly influenced through the mediation variable. When the democracy index is used, the mediation is partial. A partial mediation means that the relation between the dependent and independent is both determined by the direct and indirect path. So, the first hypothesis stated in this thesis can be partially accepted. Anxiety leads directly to more democracy, as all the direct paths are significant, and all values are positive. However, anxiety does not lead directly to a higher voting turnout. Although the relationship between anxiety and the voting turnout is insignificant, the indirect path is significant. So, it can be concluded that there is some impact of the level of anxiety on the voting turnout. Because the direct path between anxiety and voting turnout is insignificant, the hypothesis cannot be fully accepted. I expected that the relation between the democratic variables and anxiety would be positive, which is true according to the regressions. However, I also expected that this relation would be negatively mediated by the sense of belonging, but mediation turned out to be positive. Therefore, this hypothesis can be rejected.

## 4.2 Hypothesis 2

The second hypothesis I will test in this thesis is stated as follows:

*H2: There is a difference in the relationship between anxiety and the democratic variables (voting turnout and the level of democracy) in anxious versus relaxed countries.*

As shown in appendix 1, there seems to be a non-linear relationship between anxiety and the voting turnout. As argued before in section 2, the voting turnout and the level of democracy do not necessarily measure the same thing. Hence, it is interesting to see whether countries with a higher level of anxiety see different results in the mediation analysis. To investigate this, I divided the sample into two groups. One group includes countries with a higher-than-average anxiety level. The average anxiety level among the OECD countries is 5.21. This group is referred to as the anxious sample. The other group, with countries with all values below the mean value, is referred to as the relaxed sample. The anxious group has 252 observations, the relaxed group has 288 observations. For this hypothesis, I am going to compare the mediation analyses of the two samples to find out whether there is a difference between anxious countries and more relaxed countries. First, I will provide two mediation analyses with the same dependent and mediation variable for both the relaxed and the anxious countries. Following, I will elaborate on the differences. The

mediation variable for the example is property protection and the dependent variable is the voter turnout.

**Table 7: Mediation analysis ‘relaxed’. Anxiety, property (mediator), and voting turnout**

<b>Direct path (N = 72)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety - > voting (C*)	4.55 **	0.011
<b>Indirect path (N = 72)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety -> property (A)	17.72 ***	0.000
property -> voting (B)	.25 ***	0.000
<b>(Indirect effect / total effect) = (4.456/9.013) = 0.494</b>		

49% of the effect is mediated through subjective wellbeing.

<b>(Indirect effect / direct effect) = (4.456/4.4557) = 0.978</b>		
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The direct effect is almost equal to the indirect effect.

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table 8: Mediation analysis ‘anxious’. Anxiety, property (mediator), and voting turnout**

<b>Direct path (N = 48)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety - > voting (C*)	-7.58 ***	0.000
<b>Indirect path (N = 48)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety -> property (A)	.13	0.949
property -> voting (B)	.15 **	0.048
<b>(Indirect effect / total effect) = (0.019/7.729) = 0.002</b>		

0% of the effect is mediated through subjective wellbeing.

<b>(Indirect effect / direct effect) = (0.019/7.748) = 0.002</b>		
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There is no mediation.

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Tables 7 and 8, show that there are strong differences between the more anxious countries and the more relaxed countries. First, the difference between the coefficient in the direct path stands out most. As expected, there is a significant difference in the coefficients. In more relaxed

countries, when the level of anxiety increases, more people will start to vote, whereas the anxious countries start voting less. Next to this direct pathway, the indirect (mediation) path is also positively significant. So, the increase in anxiety causes the voting to increase both directly and indirectly through the sense of belonging. This indirect path is contrary to what is expected according to the literature and to the hypothesis. The relationship is decided for almost 50 percent by both the direct and the indirect path, showing that both pathways are equally strong. For the anxious sample, however, the results are the opposite to the relaxed sample. Where the relaxed countries start to vote more when becoming more anxious, the already anxious countries start voting less often. This shows there is a point at which people become too anxious and start thinking that voting does not help anymore. For the anxious sample, the indirect path is insignificant, meaning that there is no mediation happening at all. So, when the sample is divided in two groups for the level of anxiety, the outcomes change heavily. Shown below are all results summarized from the subcategories:

**Table 9: comparison outcomes: combined, anxious, and relaxed**

<b>Strategy mediation</b>	<b>Outcome</b>
<b>All countries combined</b>	2x complete mediation (only indirect path) 2x partial mediation (both significant)
<b>Anxious countries</b>	3x no mediation (only direct path) 1x partial mediation (both significant)
<b>Relaxed countries</b>	4x partial mediation (both significant)

In general, there is either complete or partial mediation happening between anxiety, the dependent variables, and the mediation variables. However, when there is already an elevated level of anxiety in a country, the mediation effect disappears and only the direct path stays. For the level of democracy, there are no notable differences between the anxious and relaxed countries. The only real difference is that when using the property protection index, there is no mediation for the anxious countries. To conclude, the following answer to the hypothesis can be drawn. There is a significant difference between anxious and relaxed countries when analyzing the relationship between anxiety and voting turnout. There seems to be a turning point where more anxiety leads to fewer people voting. The mediation effect also disappears at that specific point. The same cannot

be said for the democracy index, as the results for both relaxed and anxious countries are similar. Therefore, the hypothesis can again be partially accepted, as there is a difference in voting, but not significantly in the level of democracy. Furthermore, the indirect is positively positive, whereas I expected it to be negative.

### 4.3 Hypothesis 3

Based on all previously done analyses, the outcomes for both the dependent variables, voter turnout and the democracy index, can be compared. This is also what the third hypothesis wants to investigate. The hypothesis was stated as:

*H3: The relationship between anxiety and the voting turnout is different compared to the relationship between anxiety and the level of democracy.*

First, the number of times certain mediation relationships occurred per dependent variable is shown in table 10. The possible relations are; complete, partial and no mediation.

**Table 10: Comparison dependent variables: Voting turnout and Democracy index**

Dependent variable	Outcome
Voting turnout	2x complete mediation
	2x partial mediation
	2x no mediation
Democracy index	5x partial mediation
	1x no mediation

As can be seen, the outcomes differ a lot. Where the voting turnout had only a partial mediation twice, so both paths were significant, the democracy index always had this outcome. This means that when the democracy index is investigated, the relationship with anxiety is almost always significantly impacted by the mediation variable. When the voting turnout was investigated, the indirect path between anxiety and the voting turnout was significant four times. The direct path was only significant twice. The coefficients in the analyses can also be compared. In table 11 below, the coefficients and significance per group and pathway can be seen. For example, when looking at the first row it is noted that for the combined sample including all countries, the coefficients for path C are higher for the democracy index and insignificant for the voting turnout. Each dependent

variable has six outcomes per path, as there are two mediation variables and there are three different samples.

**Table 11: Comparison pathways between the dependent variables**

<b>Pathways</b>	<b>Voting turnout</b>	<b>Democracy index</b>
<b>Path C (direct)</b>	<b>Combined</b>	<b>Combined</b>
	Wellbeing: 0.62	Wellbeing: .91***
	Property: 0.45	Property: .91***
	<b>Anxious</b>	<b>Anxious</b>
	Wellbeing: -7.58***	Wellbeing: 1.10***
	Property: -7.58***	Property: 0.77***
	<b>Relaxed</b>	<b>Relaxed</b>
	Wellbeing: 2.83**	Wellbeing: 4.46***
	Property: 4.55**	Property: 2.83***
<b>Path A (indirect)</b>	<b>Combined</b>	<b>Combined</b>
	Wellbeing: 0.17***	Wellbeing: 0.21***
	Property: 7.59***	Property: 4.27***
	<b>Anxious</b>	<b>Anxious</b>
	Wellbeing: -0.33***	Wellbeing: -0.15***
	Property: 0.13***	Property: 1.20
	<b>Relaxed</b>	<b>Relaxed</b>
	Wellbeing: 13.93**	Wellbeing: 0.69***
	Property: 17.72***	Property: 4.55**
<b>Path B (indirect)</b>	<b>Combined</b>	<b>Combined</b>
	Wellbeing: 7.67***	Wellbeing: 3.25***
	Property: 0.35***	Property: 0.16***
	<b>Anxious</b>	<b>Anxious</b>
	Wellbeing: 7.67***	Wellbeing: 2.03***
	Property: 0.35***	Property: 0.10***
	<b>Relaxed</b>	<b>Relaxed</b>
	Wellbeing: -0.33***	Wellbeing: 2.03***
	Property: 0.13	Property: 0.10***

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Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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Several things can be concluded from the figure. From all the coefficients obtained in the democracy index regressions (18 in total), only one is insignificant. For the voting regressions, this number is three. All coefficient in the democracy index regressions are positive, showing that there is always a positive relationship between the variables in the regression. For the voting turnout, this is not the case. As shown in hypothesis 2, the relationship between voting and anxiety becomes negative when the level of anxiety reaches a certain point. Also, the mediation path becomes negative in two cases when the voter turnout is the dependent variable. Therefore, it can be concluded that although the voting turnout is essential to democracy, they are not the same. So, the third hypothesis can be accepted.

## 5. Conclusion

The reason for this thesis is to evaluate whether the claim made by Wintrobe in his article is true. He claimed that an increase in the threat level, for example, because of safety issues or the danger of artificial intelligence, would lead to a quest for security. This quest for security would erode democracy as fewer people would vote, according to him. The findings in this master's thesis show the opposite. Assuming an increased threat level increases the anxiety within a country, the increased anxiety would lead to an increase in both the voter turnout and the quality of democracy. However, there seems to be a level of anxiety where an increase of anxiety starts to decrease the voting turnout. For the democracy index, the same cannot be said. Wintrobe uses the voting turnout to explain the quality of a democracy, but as my results show, the voting turnout and the level of democracy show different coefficients. The level of democracy always shows a significant positive relationship with the level of anxiety.

Wintrobe uses the sense of belonging as the explanation for the decline of democracy in the world. In this thesis, the sense of belonging is used as the mediation variable to see to what extent the sense of belonging affects the relationship between anxiety and both the voter turnout and the democracy index. As shown in Table 9, the sense of belonging is always a significant mediator when the level of anxiety is low within a country. When the level of anxiety is above average, the mediation becomes insignificant in three out of the four regressions. With all countries combined, the sense of belonging is a significant mediator when the voter turnout is the dependent variable

This becomes insignificant for the democracy index as the dependent variable. This shows again that one cannot conclude something about the level of democracy when using voter turnout as an explanation. Other studies on the effect of anxiety on democracy showed that an increase in anxiety usually increases voter turnout. My thesis shows that this is not true, because at some point, the relationship reverses and becomes negative.

Further research on this topic can potentially show the impact of other emotions on both the voter turnout and the level of democracy in a country. For this thesis, the level of anxiety is used as an explanation, but emotions such as anger or happiness could also explain the mediation effects of the sense of belonging. Time series data is only available on a limited scale, but if this would change in the future, more insights into the voting paradox could be found. With these new insights, the sense of belonging might be replaced by a measurable variable. Also, if more data were available per country, the assumption that all countries behave similarly could be dropped. The pooled OLS model could then be upgraded to a fixed or random-effects model.



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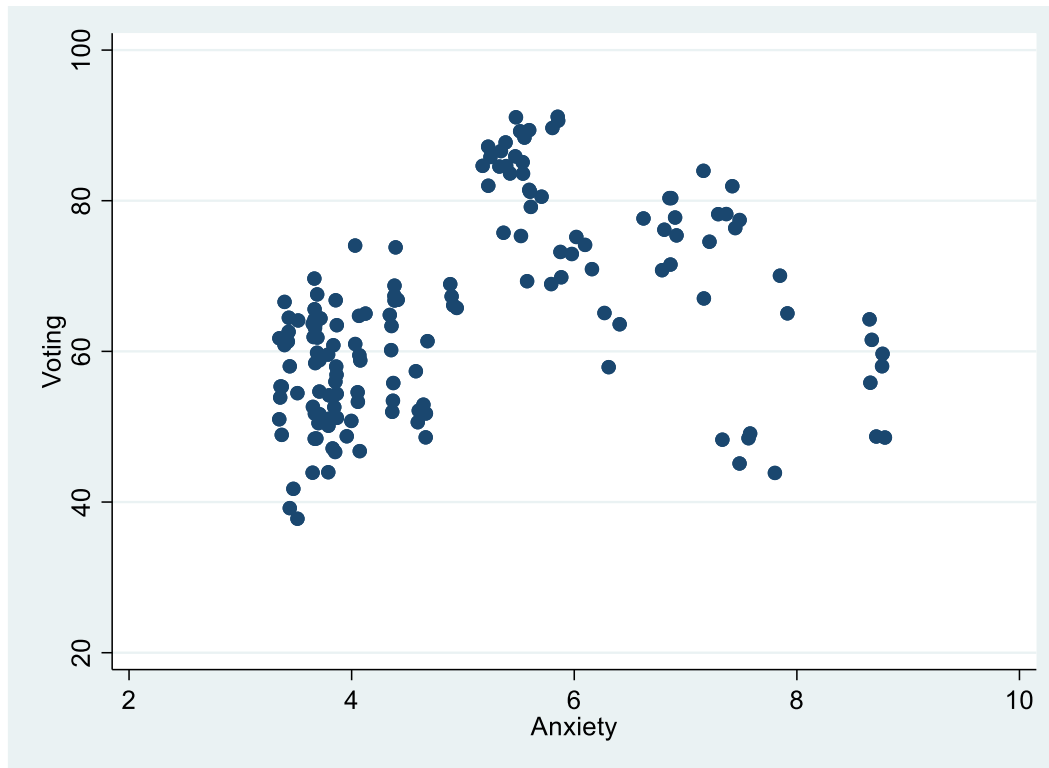
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## 7. Appendix

Appendix 1: scatterplot Anxiety and Voting, inversed U-shape



Appendix 2: Countries used in thesis

Albania	Belgium	Croatia	Czech Republic
Denmark	Estonia	Finland	France
Germany	Greece	Hungary	Iceland
Ireland	Italia	Latvia	Lithuania
Luxemburg	Moldova	Netherlands	North Macedonia
Norway	Poland	Poland	Portugal
Romania	Slovenia	Spain	Slovakia
Sweden	Switzerland	United Kingdom	

## Appendix 3 – Mediation analyses

<b>Direct path (N = 451)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety - > Democracy (C*)	1.69 ***	0.000
<b>Indirect path (N=427)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety -> property protection (A)	6.59 ***	0.000
Property protection -> Democracy	0.44 ***	0.000

(B)

$$(\text{Indirect effect} / \text{total effect}) = (2.922/4.615) = 0.633$$

63% of the effect is mediated through the property protection index.

$$(\text{Indirect effect} / \text{direct effect}) = (2.922/1.693) = 1.726$$

The mediated effect is 1.7 times as large as the direct effect of anxiety on democracy.

<b>Direct path (N = 451)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety - > Democracy (C*)	4.68 ***	0.000
<b>Indirect path (N=451)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety -> Labor freedom (A)	-0.63	0.129
Labor freedom -> Democracy (B)	0.10 **	0.022

$$(\text{Indirect effect} / \text{total effect}) = (0.063/4.615) = 0.014$$

Only 1% of the effect of anxiety on democracy is mediated through labor freedom.

$$(\text{Indirect effect} / \text{direct effect}) = (0.063/4.678) = 0.013$$

The mediated effect is negligible compared to the direct effect (only 1%), there is no mediation.

<b>Direct path (N = 360)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety - > Democracy (C*)	4.29 ***	0.000
<b>Indirect path (N=427)</b>	<b>Coefficient</b>	<b>Significance</b>
Anxiety -> Obesity (A)	0.02	0.858
Obesity -> Democracy (B)	1.00 ***	0.000

---


$$(\text{Indirect effect} / \text{total effect}) = (0.018/4.305) = 0.004$$

The relationship between anxiety and democracy is not mediated through obesity at all.

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$$(\text{Indirect effect} / \text{direct effect}) = (0.018/4.287) = 0.004$$

The mediated effect is negligible compared to the direct effect (0%), there is no mediation.

---

Direct path (N = 147)	Coefficient	Significance
Anxiety -> Voting (C*)	0.87	0.162
Indirect path (N=147)	Coefficient	Significance
Anxiety -> Wellbeing (A)	0.25 ***	0.000
Wellbeing -> Voting (B)	7.96 ***	0.000

---


$$(\text{Indirect effect} / \text{total effect}) = (1.984/2.856) = 0.695$$

About 70% of the effect of anxiety on the voting turnout is mediated by subjective wellbeing

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$$(\text{Indirect effect} / \text{direct effect}) = (1.984/0.872) = 2.277$$

The mediated effect is 2.3 times as large as the direct effect, which is also insignificant. So, there is only an indirect path between anxiety and voting

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Direct path (N = 154)	Coefficient	Significance
Anxiety -> Voting (C*)	.65	0.318
Indirect path (N=154)	Coefficient	Significance
Anxiety -> Property protection (A)	6.67 ***	0.000
Property protection -> Voting (B)	.34 ***	0.000

---


$$(\text{Indirect effect} / \text{total effect}) = (2.252/2.9) = 0.777$$

78% of the effect is mediated through property protection.

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$$(\text{Indirect effect} / \text{direct effect}) = (2.252/0.648) = 3.476$$

The mediated effect is far bigger (3.5 times), and more significant, than the direct path.

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### Appendix 4: Summary of variables

Variable	Observations	Mean	Std. Dev	Min/Max
Subjective wellbeing	455	6.38	0.91	4.18/8.02
Anxiety	451	5.21	1.51	3.34/8.79
Democracy index	510	74.72	14.28	27.80/87.95
Voting turnout	171	64.14	13.19	31.84/91.15
Property rights protection	540	71.57	19.03	31.84/91.15
GDP increase	480	1.53	3.99	-14.46/23.99
Tertiary education	418	31.71	12.22	53.71

### Appendix 5: Democratic variables over time

